

Encl. # 4 to
DPS-5946
COPY 1 OF 1

SUBJECT: 1000 Hour Inspection on U-2 343

The first U-2 to approach 1000 hours was inspected at EAFB by LAC personnel. Airplane serial number was 343, flight time was 991 hours and 20 minutes. The inspection was completed 6 June 1958.

25X1A

First flight on the airplane was made 27 October 1955. From this time until March 1957 the primary use of the airplane was pilot training [redacted]. In March 1957 an undershoot landing involving tearing out of the main gear was experienced. After major repairs the airplane was assigned as a test vehicle at EAFB.

General condition of the airplane at the start of the inspection appeared good. There was no sign of corrosion as had been noted on other airplanes with less time. Absence of corrosion was attributed to two things. First, the airplane had never been polished or buffed. Second, it had never been on the ground any place but Burbank, [redacted] EAFB, spending most of its time in the dry climate at the latter two.

25X1A

Numerous components were arbitrarily replaced due to flight time or calendar date, at the recommendation of their manufacturers. These items are as follows:

Standby Compass
R/C Indicator
Oil Pressure Indicator
Radio Compass Indicator
L. Bay Altimeter
M. L. G. Position Indicator
Tachometer
D. C. Loadmeter
8 Day Clock
M. L. G. Actuating Cylinder
M. L. G. Strut Assembly
T. L. G. Actuating Cylinder
T. L. G. Wheel
L. H. Brake Assembly (2)
Flap - Jack Screws (16)
Right Wing Flap Hydro Motor
Aileron Tab Actuator
Elevator Tab Actuator
Check Valves (L. H. Wing)(2)
Fuel Level Valves in Sump (4)
L. H. Low Level Switch in Sump
Access Air Shutoff Valve
Boost Pump Hydro Motor
Hydro Filter
Refrigerator Bypass Valve
Ram Air Shutoff Valve

Fuel Totalizer
Hydro Pressure Indicator
Fuel Pressure Indicator
Ships Altimeter
Wing Flap Pos. Indicator
Tail Gear Position Indicator
Pressure Ratio Indicator
Elapsed Time Clock
M. L. G. Drag Strut
M. L. G. Uplock Cylinder
T. L. G. Drag Strut
T. L. G. Strut Assembly
Brake Master Cylinder
R. H. Brake Assembly (2)
Left Wing Flap Hydro Motor
Dive Brake Selector Valve
Aileron Gust Control Actuator
Suction Relief - check Valves (4)
Pilot Fuel Shutoff Valves in Sump Tank(4)
R. H. Low Level switch in Sump
Elect. Fuel Shutoff Valve at Engine
Access Air Pressure Regulator
Hydro Press. Regulator - Reservoir
Airflow Regulator
Refrigerator
C/P Safety Valve

Filter - Water Separator
Oxygen Indicator
A. C. Voltage Regulator
Fire Detector Thermo Switches
Engine #P607373

Oxygen Regulator Shutoff Switch
D. C. Voltage Regulator
Reverse Current Relay
Inertia Reel

All of the above components were still in working order when removed for replacement. Some high consumption items had been replaced several times during the airplane life, but many of the original components were removed at this inspection.

The following components were removed for failure or damage:

Mach Control Amplifier
R. H. Landing Light
Universal Joints (Flaps) (3) - Worn.
L. H. Dive Brake Actuating Cylinder - Leaking.
R. H. Dive Brake Actuating Cylinder - Leaking.
R. H. Elevator Tab - Warped.
Elevator Torque Tube - Scratched.
Fuel Lines (H3-16) (2) - Damaged by Flex Lines.
Fuel Line (H3-17) - Damaged by Flex Lines.
Hydro Pressure Line - Leaking.
Defroster Fan - Damaged Blades.
Generator Blast Flex Hose - Deteriorated.
Nose Cover Assembly - Glass was cracking, finish was peeling.

Some of these items had been noted as damaged earlier but replacement delayed until the major inspection.

The airframe was carefully inspected for cracks, cupped rivets, etc. It was necessary to replace the forward inboard and outboard inner skins of the L. H. air duct due to cracks. The R. H. duct had been similarly repaired 200 hours before. This airplane was one of the early serial numbers which had .032 75ST duct skins. Beginning with serial 355 the duct skins were made from .040 24ST to eliminate the cracking. Some rivets in the fuselage skin over the wing were replaced due to cupping.

The entire electrical system was inspected. To accomplish this it was necessary to remove the 4 bay fiberglass liner which is peculiar to only the "C" airplanes. All wiring was in good condition and no replacement was necessary.

Both landing gears were replaced. The main gear appeared to be in good condition but no facilities were readily available for zygo inspection. In the interest of time it was decided to install a new one and send the old one in for overhaul. The tail gear was badly worn in all the joints and replacement was warranted.

1000 Hour Inspection on the U-2 343 (cont.)

The wing flap system required replacement of the outboard guide screws. The threads were pitted and the Electrofilm plating was worn off. The 15 jack screw actuators were replaced due to lack of lubrication.

Prior to the inspection a creaking had been noticed in the wings when they were walked upon. All wing removable panels were removed and the structure carefully inspected for cracks or loose parts. Each wing had one place where an upper and lower rib flange were rubbing. The flanges were bent slightly to allow clearance. Nothing else could be found wrong with the structure. The tank sealing compound had some cracks showing but they had not been leaking. Cracked areas were painted over with Thiokol. The wing tanks were quite clean as compared to some other wings that had been opened up. After the tank panels were reinstalled considerable trouble was experienced resealing them. It is felt that on future 1000 hour inspections the panels need not be removed for structural inspection. Removal of the suction relief valve panels allows an opportunity for cleanliness inspection.